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Complication rates of ultra-light Titanium Coated TVT vs. Titanium Coated TVT-O sub-urethral meshes: A prospective randomized study

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Objective:

The aim of this prospective randomized study was to evaluate and compare the complication rates of retro-pubic titanium-coated TVT procedures with complication rates of trans-obturator titanium coated TVT-O procedures conducted among women suffering from Stress Urinary Incontinence (SUI). Furthermore, we compared our results with similar prospective studies investigating the complication rates that occurred when using uncoated polypropylene TVT and TVT-O suburethral meshes.

Materials & Methods:

Four major urogynecology centres participated in this study. Three of these are located in Berlin, Germany and the fourth is located in Manama, Bahrain. A total of 200 women that were diagnosed with SUI at these four centres were included in this study and their age ranged from 32 years - 94 years. The study group was then subjected to a randomized selection of operative technique which resulted in 88 women undergoing retro-pubic TVT procedures while the remaining 112 women underwent trans-obturator TVT-O procedures. Only ultra-light weight titanium coated polypropylene meshes (TiLOOP) were utilised in all of these procedures. All patients within the study group were reassessed for complications after one year from the date of surgery.

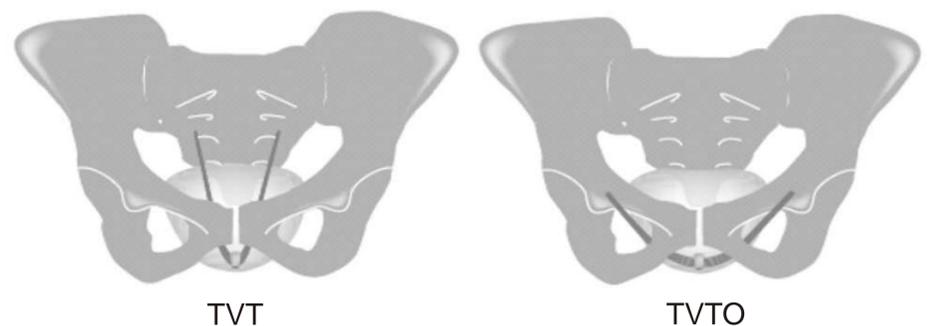
Results:

After one year from the date of surgery, continence rates were calculated at 91% for those women who received a retro-pubic TVT compared with only an 86% continence rate among those females who underwent a trans-obturator TVT-O procedure. These rates have been found to be superior when compared to similar studies reporting continence rates of uncoated polypropylene TVT and TVT-O meshes. However, the following complications were encountered among our study group as follows:

- 1 x Retrobubic Hematoma Post-TVT (managed conservatively)
- 2 x Superficial Skin Abscess
- 3 x Overcorrection (Corrected on 7th postoperative day)
- 8 x de-novo urge syndrome
- 1 x Vaginal Erosion of the TVT material.

Conclusions:

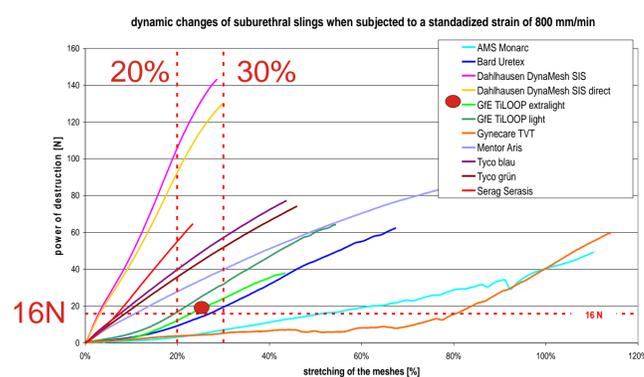
We can conclude from this study that titanium coated TVT and TVT-O meshes offer superior continence rates when compared to their regular uncoated equivalents and this has been proven to be statistically significant. Secondly, at the one year follow up period, there are far less reports of complications such as erosions, dyspareunia and de-novo urge syndrome when comparing titanium coated meshes to regular uncoated types. Never the less, a longer follow up period is recommended. Finally, the homogenic nature of the titanium coated meshes to normal human tissue tensile strength has been reflected in the low incidence of over-correction among patients receiving titanium coated TVT and TVT-O meshes (See Graph).



Attaching the thread to the helical introducer.

Attaching the mesh to the thread.

Power-Strength-Curves of Suburethral Slings

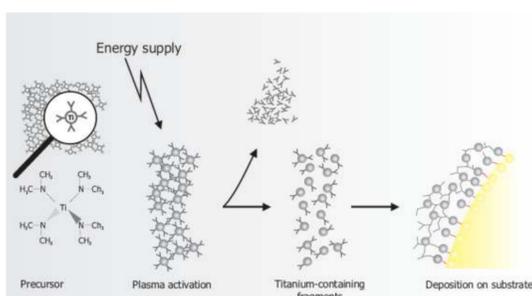


Authors opinion:

Laboratory testing of the tensile strength of various suburethral slings have shown titanium coated meshes to be the most isometric to that of human tissue. Therefore, this would make TiLOOP the most suitable mesh for these procedures.



Perineal and introitus ultrasound before and after operation



Material Properties:

- laser-cut titanized monofile polypropylene mesh
- pore size = 1 mm
- tensile strength = 16 N/cm

